

**Working Paper 2012-02**



**BERKELEY**  
**iurd** **INSTITUTE OF URBAN AND**  
**REGIONAL DEVELOPMENT**

**Yes, But Will They Let Us Build?**  
**The Feasibility of Secondary Units in the East Bay**

**Alison Nemirow and Karen Chapple**  
**October 2012**

**IURD WORKING PAPER WP-2012-02:**

**YES, BUT WILL THEY LET US BUILD? THE FEASIBILITY OF SECONDARY UNITS IN THE EAST BAY**

Alison Nemirow and Karen Chapple

## **Introduction**

California's implementation of SB 375, the Sustainable Communities and Climate Protection Act of 2008, is putting new pressure on communities to support infill and affordable housing development. As the San Francisco Bay Area adds two million new residents by 2035, infilling the core (in targeted Priority Development Areas, or PDAs) could accommodate over half of the new population, according to the Association of Bay Area Governments (ABAG). But at the same time, infill could increase housing costs and exacerbate the region's affordability crisis.

One potential solution is secondary units (also called in-law units or accessory dwelling units). Self-contained, smaller living units on the lot of a single-family home, secondary units can be either attached to the primary house, such as an above-the-garage unit or a basement unit, or detached (an independent cottage). Recognizing the potential of secondary units as a housing strategy, California has passed several laws to lower local regulatory barriers to construction. Planners and other stakeholders see secondary units as one way to accommodate future growth: for instance, in its projections for the Grand Boulevard Initiative in San Mateo/Santa Clara counties, the Greenbelt Alliance assumes that 5 percent of new housing production will come from in-law units. Yet, local regulations may impede development; a previous Bay Area study found that zoning and planning regulations, particularly onerous parking requirements, constituted the most significant barrier to secondary unit development.<sup>i</sup>

This paper (WP-2012-02) examines the regulatory barriers that must be solved in order to scale up a secondary unit strategy. It is part of a series of working papers that culminated in the summary report, *Yes in My Backyard: Mobilizing the Market for Secondary Units*. The first, *Secondary Units and Urban Infill: A Literature Review* (WP-2011-02), summarizes the studies and reports published to date on the extent of secondary units and the viability of a secondary unit housing strategy. *Understanding the Market for Secondary Units in the East Bay* (WP-2012-03) looks at the function of secondary units in the rental market and the support for this strategy among homeowners. *Less Parking, More Carsharing: Supporting Small-Scale Transit-Oriented Development* (WP-2012-04), examines the potential for residents of secondary units to rely on carsharing rather than car ownership. *Scaling up Secondary Unit Production in the East Bay: Impacts and Policy Implications* (WP-2012-05), looks at the viability of secondary units as an infill strategy in terms of smart growth, housing affordability, economic and fiscal impacts. It also summarizes the regulatory changes that would need to occur in order to scale up the strategy.

This paper begins with a discussion of how to determine the development potential for secondary units, and then provides an overview of how many secondary units can be built in the East Bay of the San Francisco Bay Area under current regulations. The next two sections examine key regulatory barriers in detail for the five cities in the study (Albany, Berkeley, El Cerrito, Oakland, and Richmond), looking at lot size, setbacks, parking requirements, and procedural barriers. A sensitivity analysis then determines how many units could be built were the regulations to be relaxed. The conclusions offer a preview of the policy implications, discussed further in WP-2012-05.

## **Development potential for secondary units**

Since 1982, the State of California has provided legislative guidelines to local governments on how they may regulate the development of secondary units. The “Secondary Unit Law,” most recently amended in Assembly Bill 1866 of 2003, requires that local governments adopt an ordinance with the intent of facilitating secondary unit development, and consider secondary unit development applications in a ministerial (i.e. non-discretionary) process. Local secondary unit ordinances may include reasonable development standards such as height, setbacks, lot coverage, and minimum unit sizes. The law limits parking requirements to one space per secondary unit unless the locality makes specific findings indicating that more spaces are needed. State standards apply if a locality fails to adopt a secondary unit ordinance.<sup>1</sup>

Despite the state’s guidance, regulatory barriers to building secondary units remain. With the input of our technical assistance committees, we developed a methodology to estimate how many single-family lots in the study area could meet the applicable zoning requirements and still have sufficient backyard space to accommodate a detached secondary unit. The study focused on detached units because analyzing the potential for attached units – which can take the form of a conversion of existing space in or an addition to the primary unit – would have required data that is not available on the architectural details and space utilization of individual single-family homes. Detached units account for only about one-third of observed units (see WP-2012-03), though this share could grow in the future, due to the growth of new household types, the rise of the Tiny House movement, the aging of the baby boomers, and other factors. In any case, by excluding attached units and garage conversions, this analysis provides a conservative estimate of the development potential for secondary units.

### **Methodology**

The sub-region of the East Bay examined in this paper is situated within parts of Alameda and Contra Costa Counties, and includes portions of the cities of Richmond, El Cerrito, Albany, Berkeley, Emeryville, and Oakland. It can be thought of as the northern portion of a secondary urban core for the region that flanks the most densely populated area, the City of San Francisco, on the other side of the San Francisco Bay.

In this paper, we present results on secondary unit housing for the “Station Areas,” roughly half-mile circles around five rapid rail transit stations arranged along a corridor of roughly eight miles in length, totaling 4.1 square miles in land area (Figure 1). We then extrapolated results from these station areas to the flatlands area of the three major cities, as discussed in WP-2012-05.

Figure 1. BART station areas included in study.

---

<sup>1</sup> Cathy E. Creswell to Planning Directors and Interested Parties, “Secondary-Unit Legislation Effective January



We used parcel data purchased from a third-party vendor to analyze the effect of existing land use regulations on the ability of a homeowner to build a detached secondary unit in the backyard, and the effects of some reasonable changes in land use regulations. This analysis relied on three techniques: i) using Geographic Information System (GIS) software; ii) examining the parcels with Google Earth; iii) and visiting a sample of the parcels in the field and recording observations. Appendix A provides a detailed description of this methodology.

### Overview of findings

Because each of the five jurisdictions studied has its own secondary unit zoning regulations, the results are reported here by city (Table 1).<sup>2</sup>

**Table 1. Estimated Potential Secondary Units by Study Area**

Study Area	Single-Family Residential Parcels in Zoning Districts where Secondary Units are Permitted		
	Total Parcels	Est. Parcels that Could Accommodate Legal Detached Secondary Unit (a)	As Percent of Total
Albany	224	60	27%
Berkeley (b)	3,003	1,070	36%
El Cerrito	1,351	151	11%
Richmond	552	73	13%
Oakland	1,286	52	4%
<b>Total</b>	<b>6,416</b>	<b>1,406</b>	<b>22%</b>

(a) Does not account for existing secondary units.

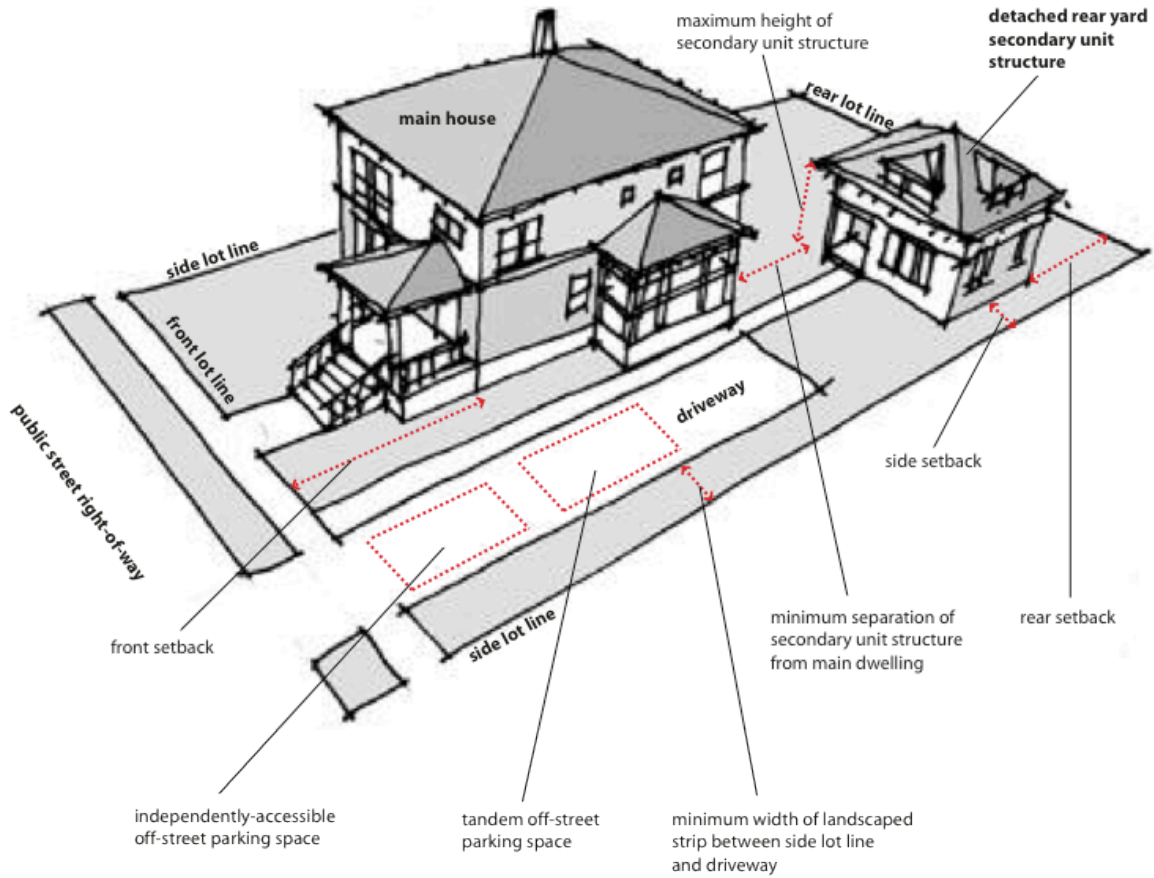
(b) Assumes that homeowners could obtain AUPs to reduce setbacks to 4 feet, allow tandem parking, and/or waive parking requirements as necessary.

In total, we estimate that the five station areas could accommodate about 1,400 legal, detached secondary units under current zoning regulations – or about one on every fifth single-family residential property. Interestingly, this corresponds closely to the share of parcels that currently house a secondary unit, according to our homeowner survey: in WP-2012-03, we show that approximately 16 percent of single-family residential properties in the study area have at least one secondary unit.

The cities vary widely in the share of parcels that could accommodate detached secondary units; these differences reflect the wide range of development standards on the books. In general, lot size minimums, setbacks, and parking requirements pose the most significant barriers to the development of detached secondary units. Figure 2 provides an illustration of various dimensional standards that are commonly specified in the municipal zoning ordinances for single-family residential properties, and that can affect the feasibility of obtaining approval for a secondary unit. The following sections discuss how these barriers impede homeowners’ ability to create secondary units in the five cities. Procedural barriers also affect the potential for building significant numbers of secondary units.

Figure 2. Development standards for detached secondary units.

<sup>2</sup> The study areas also include a small section of Kensington, an unincorporated community in Contra Costa County, which we did not study.



Note: This image is modified from an excerpt from the City of Santa Cruz's ADU Manual, available at [www.cityofsantacruz.com](http://www.cityofsantacruz.com).

## **Key Regulatory Barriers**

Table 2 summarizes secondary unit regulations in Albany, Berkeley, El Cerrito, Richmond, and Oakland. Our analysis examined the development standards such as lot size, lot coverage, setback, building separation, and parking requirements that affect the feasibility of building a detached secondary unit in a property's backyard. As described in more detail in Appendix A, we used commercial parcel data to screen for lot size and lot coverage requirements in ArcGIS; measured backyards in Google Earth to understand the impact of setbacks; and conducted field work to estimate how many parcels that met other standards for a secondary unit could accommodate the required parking.

The analysis revealed that lot size, setback, and parking requirements generally pose the most significant barriers to secondary unit development, though the regulations – as well as their impacts and interactions – vary by city. This section discusses each regulatory barrier in turn.<sup>ii</sup>

**Table 2. Summary of Zoning Regulations for Secondary Units in Albany, Berkeley, El Cerrito, Oakland, and Richmond**

Zoning Requirement for Secondary Units	Albany	Berkeley	El Cerrito	Oakland*	Richmond
<b>Where permitted</b>	1 secondary unit per single-family dwelling unit ("primary unit") in R-1 and R-1:H districts.	1 secondary unit per single-family dwelling unit in any residential district.	1 secondary unit per single-family dwelling unit in any residential district.	1 secondary unit per single-family dwelling unit in any residential district.	1 secondary unit per single-family dwelling unit in any residential district, planned area district, and in the exclusive agricultural district.
<b>Minimum lot size</b>	--	4,500 s.f.	--	--	5,000 s.f. in study area.
<b>Minimum floor area</b>	220 s.f.	300 s.f.	150 s.f. for detached unit; 400 s.f. for attached unit	--	150 s.f.
<b>Maximum floor area</b>	650 s.f.	25% of gross floor area of primary unit, up to 640 s.f.	750 s.f. or 40% of primary unit floor area (up to 1200 s.f. or 75% with CUP**)	500 s.f. regardless of primary unit floor area; or up to 900 s.f. if 50% or less of primary unit floor area.	640 s.f.
<b>Maximum lot coverage;</b> <b>Floor-area-ratio (FAR);</b> <b>Minimum open space</b>	Must conform with FAR applicable to primary unit. Total coverage of a detached secondary unit and any other accessory buildings in the backyard may not exceed 30% of the back-yard area.	Must conform with lot coverage requirements applicable to primary unit (35-50%, depending on district and number of stories in primary unit). Must conform with open space requirements for both units (200-400 s.f. per unit)	Must conform with lot coverage requirements applicable to primary unit (50% in the flatlands)	Must conform with lot coverage requirements applicable to primary unit (depending on zone, typically 40-50% or 2,000 s.f., whichever is greater)	In single-family residential developments, interior yard space (in rear or courtyard) equal to 16% of the lot area shall be provided.
<b>Minimum setbacks from rear and side property lines</b>	Setback from rear and side property lines must meet or exceed the minimum side yard setback required for the lot (typically 3-5 feet).	Must conform with setbacks required for the primary unit, except that the setbacks may be reduced to 4 feet from all lot lines with an AUP.**	Must conform with setbacks required for primary unit: typically 15-20 feet from rear lot line and 5-8.5 from side lot line.	Must conform with setbacks required for primary unit: typically 10-15 feet from rear lot line and 5-10 feet from side lot line.	5 feet from all lot lines;
<b>Minimum building separation</b>	6 feet from primary structure.	--	6 feet from primary structure.	--	10 feet from primary structure.

*Cont'd on following page.*



**Table 2 Cont'd.**

<b>Zoning Requirement for Secondary Units</b>	<b>Albany</b>	<b>Berkeley</b>	<b>El Cerrito</b>	<b>Oakland*</b>	<b>Richmond</b>
<b>Height limits</b>	12 feet, except that within 3 feet of the property line, no exterior wall shall exceed 8.5 feet.	12 feet in average height	Must conform to zoning requirements applicable to primary unit, except a detached secondary unit may exceed 15 feet with CUP.**	15 feet in most zones.	22 feet/2 stories.
<b>Off-street parking requirement</b>	--Depends on year primary dwelling unit was built (Table ). --In essence, two parking spaces required for the secondary unit; the primary unit does not need to come into conformance.	--One parking space per unit (i.e. one each for secondary and primary units). --One or both parking spaces may be waived with an AUP** if the lot has no room and specific findings are made. --May be arranged in tandem (one space directly behind the other) with AUP.**	--Primary unit must come into conformance (two covered off-street spaces). --One additional space required for the secondary unit. --Space for secondary unit may be in tandem with required parking for primary unit; may be located in front setback and uncovered so long as grade does not exceed 10%.	--One parking space for the secondary unit. Tandem parking may be permitted in some zones if the floor area of the secondary unit is 500 s.f. or less and each unit has at least one independently accessible parking space. --Primary unit does not need to come into conformance with parking requirement.	--One uncovered off-street parking space for the secondary unit; may not be located in tandem with other required parking. -- May be provided in the required front yard. --Primary unit does not need to come into conformance with parking requirement.
<b>Owner occupancy</b>	Owner must occupy either the primary or secondary unit.	Owner must occupy either the primary or secondary unit.	Owner must occupy either the primary or secondary unit.	Owner must occupy either the primary or secondary unit.	--
<b>Sale of unit</b>	May not be sold separately from primary unit.	May not be sold separately from primary unit.	May not be sold separately from primary unit.	May not be sold separately from primary unit.	May not be sold separately from primary unit.
<b>Source</b>	City of Albany, <i>Planning and Zoning Code</i> , Section 20.20.080.	City of Berkeley, <i>Zoning Ordinance</i> , Chapter 23D.	City of El Cerrito, <i>Zoning Ordinance</i> , Sections 19.20.190 and 19.24.	City of Oakland, "Zoning Regulations for Secondary Units" handout (as of April 2011, <i>Planning Code</i> Section 17.102.360).*	City of Richmond, <i>Zoning Ordinance</i> , Section 15.04.810.025

Note: This table summarizes the main regulations for secondary units, but does not include every applicable regulation in each city.

\*Oakland's zoning regulations changed during the course of the study. The regulations shown here and used throughout the study are no longer current as of April 2011. However, the new zoning code made only minor changes to the requirements for secondary units.

\*\* AUP: Administrative Use Permit; CUP: Conditional Use Permit

## **Lot Size Minimums**

Berkeley and Richmond require that a parcel meet the required lot size minimum for the applicable zoning district in order for a homeowner to create a secondary unit (4,500 s.f. in Berkeley and 5,000 s.f. in the zoning districts we studied in Richmond). These regulations make it impossible for more than half of homeowners in our study areas to build a secondary unit: only 40 percent of the single-family parcels in the Berkeley study areas and 47 percent in the Richmond study areas meet the applicable lot size requirement. Moreover, this policy is regressive; lot size minimums are likely have a disproportionate effect on the ability of low-income homeowners to build secondary units.

## **Setbacks**

While Albany, Berkeley, and Richmond allow reduced setbacks for secondary units, El Cerrito and Oakland require a secondary unit to conform to the lot setbacks required for the primary unit. These setbacks range from about 10 to 20 feet from the rear lot line and 5 to 10 feet from the side lot line (see Table 2). Although El Cerrito and Oakland do not have lot size minimums, these setback requirements would in effect prevent owners of many small lots from building a detached legal secondary unit. We estimate that about 70 percent of single-family parcels in the El Cerrito study areas and fewer than 60 percent in the Oakland study areas can accommodate a detached secondary unit without encroaching into the required setbacks. (As discussed below, many of these parcels with sufficient backyard space to accommodate the required setbacks and a detached secondary unit could not legally build a secondary unit under current zoning because of parking requirements.)

Even in the cities that allow reduced setbacks for secondary units, the setback requirement can still pose a barrier. In particular, even a four-foot setback requirement – the requirement in Berkeley, and the lowest allowed in any of our study areas – can prevent homeowners from converting existing detached structures into a secondary dwelling unit. Many detached garages in older East Bay neighborhoods were built on or very near the lot line. In all of the cities studied, such structures would have to be moved in order to be converted. Even in cases where a detached garage can be converted, the homeowner would typically need to provide replacement parking – even if the garage is too small to accommodate a modern car.

## **Parking Regulations**

Off-street parking requirements present one of the most significant barriers to secondary unit development in all five cities. Table 3 summarizes the parking requirements in the five cities. The cities vary not only in the number of parking spaces required for single-family homes (the “primary unit”) and secondary units, but also in whether the zoning code requires covered parking; allows tandem parking;<sup>3</sup> requires the property to come up to conformance with the parking requirement for the primary unit; or allows parking to be located in the required front setback.

---

<sup>3</sup> Tandem parking spaces are located one behind the other, so that the car in front needs to pull out in order for the car in the rear to access the street.

**Table 3. Parking Requirements for Single-Family Properties with Secondary Units in Berkeley, Oakland, El Cerrito, Richmond, and Albany**

	<u>Berkeley</u>	<u>Oakland<sup>(a)</sup></u>	<u>El Cerrito</u>	<u>Richmond</u>	<u>Albany (varies by construction date of primary unit)</u>		
					<u>pre-1958</u>	<u>1958-78</u>	<u>post-1978</u>
<u>Parking spaces required for primary unit</u>							
Number of spaces	1	1	2	2	0	1	2
Required to be covered?	No	No	Yes	Yes	No	No	No
May be in tandem with one another?	N/A	N/A	Yes	No	N/A	Yes	Yes
Must come into conformance to build secondary unit?	Yes*	No	Yes	No	Yes	Yes	Yes
<u>Parking spaces required for secondary unit</u>							
Number of spaces	1	1	1	1	2	2	2
Required to be covered?	No	No	No	No	No	No	No
May be in tandem with spaces req'd for primary unit?	No†	Yes**	Yes	No	No	Yes	Yes
May be parked in required front setback?	No†	Yes ‡	Yes	Yes	No†	No†	No†

\* May be waived with use permit

† May be allowed with use permit

\*\* Allowed in certain zones if secondary unit is 500 s.f. or smaller

‡ Depends on neighborhood context

(a) Requirements shown for Oakland are for zoning districts that fall in the study areas only; requirements in other districts vary.

Sources: City zoning codes and interviews with staff, Center for Community Innovation, 2010-11

In order to understand the ramifications of these parking policies, we conducted field visits in Albany, El Cerrito, Richmond, and Oakland. In each city, we visited about 70 randomly selected properties that met the other (non-parking) zoning requirements for a secondary unit. Overall, only 29 percent of the properties in Albany, 26 percent in El Cerrito, 11 percent in Oakland, and 8 percent in Richmond could provide sufficient parking on existing paved areas of the lot. While our analysis of parking conditions in Berkeley was less detailed, our interviews with City staff indicate that, as in the other jurisdictions, parking requirements pose a major barrier to secondary unit development.

### ***Berkeley***

Berkeley requires one off-street parking spot each for the primary and secondary units. The parking spots may be located in tandem with an administrative use permit (AUP). According to staff, Berkeley will waive the parking requirements altogether with an AUP. However, the language of the ordinance is vague, and the AUP process could pose a particular barrier for homeowners who are not experienced in the development process.

Homeowners who try to provide off-street parking for their secondary unit encounter other barriers. First, a legal parking space must have a two-foot landscape barrier between the parking space and the lot line. This can make it impossible to provide a new, legal off-street parking space for homeowners who have a side yard driveway – as did approximately 60 percent of single-family homes in the station areas that we observed in Google Earth – many of which are built on or very near the lot line.

Homeowners who cannot provide a legal parking space in the side yard may also be unable to provide one in the front yard. Berkeley's zoning code does not permit cars to be parked in the required front-yard setback, which is typically 15-20 feet in residential neighborhoods. This requirement can only be waived with a variance, and City staff report that variances are extremely rare in Berkeley. Currently, only around 3 percent of single-family properties in the station area have a front yard deep enough to accommodate a front driveway parking space that would not be located in the setback. Based on measurements taken in Google Earth, we estimate that as many as 30 percent of single-family properties could accommodate spaces in the front driveway if parking in the front setback were permitted.

### ***Oakland***

Oakland's zoning code requires that a homeowner provide one parking space for the secondary unit, in addition to the parking spaces required for the primary unit (one to two spaces, depending on the zone). If the existing primary dwelling does not comply with current parking requirements, then additional parking is only required for the secondary unit. If the secondary unit is 500 s.f. or less and located in certain residential zoning districts, the secondary unit parking space may be located in tandem with one primary unit parking space, so long as the primary unit has another parking space that is independently accessible from the street. However, if the secondary unit is greater than 500 s.f., or the property is located in another zone, all required parking spaces must be non-tandem (side by side).

Only 10 percent of parcels in the Oakland study area that we visited could provide the required number of independently accessible parking spaces on areas that are currently paved, either with side-by-side spaces in the rear of the lot or multiple parking areas (e.g. a front and side driveway).

The remaining 90 percent of parcels had either no off-street parking (10 percent) or a front or side driveway that was wide enough for only one car. These parcels cannot provide more than one non-tandem parking space on the current paved area. We estimate that around a third of these have a side driveway and sufficient space in the backyard to provide two side-by-side spaces. In practice, however, the radius required to maneuver in and out of these spaces and/or existing structures in the backyard may make it impossible for many of these homeowners to provide sufficient parking.

### ***El Cerrito***

El Cerrito's zoning code requires that in order to develop a secondary unit, a property must come into conformance with the off-street parking requirement for the existing single-family house – i.e., the lot must provide two covered parking spaces for the primary unit. In addition to the parking for the primary unit, the homeowner must also provide one (uncovered) space for the secondary unit.<sup>4</sup> In effect, therefore, the code requires that a property located in the flatlands must have a two-car garage or carport in order for the homeowner to build a secondary unit.

Only 24 percent of the properties we visited in El Cerrito had the two-car garage necessary to provide two covered parking spaces plus an additional space for a secondary unit.<sup>5</sup>

### ***Richmond***

Richmond also requires covered parking for the primary unit and requires the same number of parking spaces as El Cerrito, but with some key differences. In Richmond, properties do not need to come into conformance with the parking requirement for the primary unit in order to build a secondary unit. Thus, it is possible in Richmond for a homeowner with a one-car garage or carport – or even no covered parking at all – to build a legal secondary unit. However, none of the required parking spaces may be located in tandem, which in effect means that no required spaces can be provided in a driveway. Instead, homeowners are allowed to create a parking space next to the driveway in the front yard, so long as the pad is paved with a decorative treatment (as pictured in Figure 3).

Just over half of the properties we visited in Richmond could accommodate a legal parking space for the secondary unit – but to do so, all but 16 percent would need to pave part of their front yards.

---

<sup>4</sup> The parking space for the secondary unit may be uncovered, may be located in the required front setback (so long as the grade in this area does not exceed 10%), and may be in tandem with the required parking for the primary unit. The zoning code specifies that exceptions to parking provisions require a Conditional Use Permit (CUP). However, according to staff, in practice, CUPs for parking waivers are rarely if ever granted.

<sup>5</sup> We based our observations of garage size (one- or two-car) on the width of the garage. In theory, a garage that appears wide enough to accommodate just one car could be deep enough to accommodate two cars parked in tandem. According to staff, such long, narrow garages exist in El Cerrito, but are relatively rare.



**Figure 3.** Richmond’s requirement that the secondary unit’s parking space be independently accessible from the primary unit’s parking spaces in effect necessitates that homeowners pave their front yards in order to build a legal secondary unit, as in this case.

### ***Albany***

Albany’s Measure D, passed by voters in 1978, requires that two off-street parking spaces be provided for each dwelling unit. When the Measure passed, existing homes were grandfathered in. However, when a homeowner makes a major addition, the property must be brought into conformance. In the case of secondary units, Albany’s zoning code contains different parking requirements depending on the year that the primary dwelling unit was built (Table 4). In essence, the primary unit does not need to come into conformance with Measure D, but the homeowner must provide two parking spaces for the secondary unit.

**Table 4. Parking Requirements for Secondary Units in Albany**

<b>Construction Date of Main Dwelling Unit</b>	<b>Number of Parking Spaces</b>	
	<b>Prior to Creation of Secondary Unit</b>	<b>With Secondary Unit</b>
Before 1958	0	2
1958 - 1978	1	3
After 1978	2	4

Source: City of Albany, Planning and Zoning Code, Section 20.28.040.4.a

The parking spaces must be arranged so that the residents of each unit have independent access to at least one of the unit’s required parking spaces. While the Albany zoning code specifies that required parking may be provided in the front setback with a major use permit, City staff tells us that the Planning and Zoning Commission would be unlikely to approve a configuration such as the one shown in Figure 3, where the front yard is paved. Instead, this provision is used to allow a required parking space in the front driveway.

All of the properties located in our Albany study area were built before 1958. However, only a quarter of the properties we visited could provide the two side-by-side spaces required for a secondary unit (typically in a two-car garage or carport). Just over half had one-car garages or carports with a driveway wide enough for one car; these parcels could not provide the required side-by-side spaces for a secondary unit. The final quarter of the sample had side yard driveways,




with or without a detached backyard garage. Based on measurements taken in Google Earth, we estimated that 10 of the 15 parcels with side yard driveways could accommodate two side-by-side spaces in the rear yard in addition to a secondary unit. In total, therefore, slightly over 40 percent of the sample could provide the required parking.

Table 5 summarizes the parking configurations allowed for secondary units in the five cities, illustrating the variety of regulations across cities.

**Table 5. Parking Configurations Allowed by Right in Albany, Berkeley, El Cerrito, Oakland, and Richmond**

<u>Parking Configuration</u>	<u>Albany</u> <u>(primary unit</u> <u>built after 1958)</u>	<u>Berkeley</u>	<u>El Cerrito</u>	<u>Oakland</u>	<u>Richmond</u>
(a) No off-street parking	X	X*	X	X	X
(b) No garage/carport; tandem spaces in front or side driveway	X	X*	X	X	X
(c) No garage/carport; non-tandem spaces in rear (accessed by side driveway)	✓	✓	X	✓	X
(d) 1-car garage/carport; tandem spaces in front or side driveway	X	X*	X	X	X
(e) 1-car garage/carport; 1+ non-tandem spaces in front yard (next to front driveway)	✓	X*	X	✓	✓
(f) 2-car garage/carport; tandem spaces in front or side driveway	✓	✓	✓	X	X

 Parking space for primary unit, uncovered	 Parking space for primary unit, covered	 Parking space for secondary unit (uncovered)
✓ Allowed by right	X Not allowed	X* Allowed only with AUP

## **Procedural Barriers**

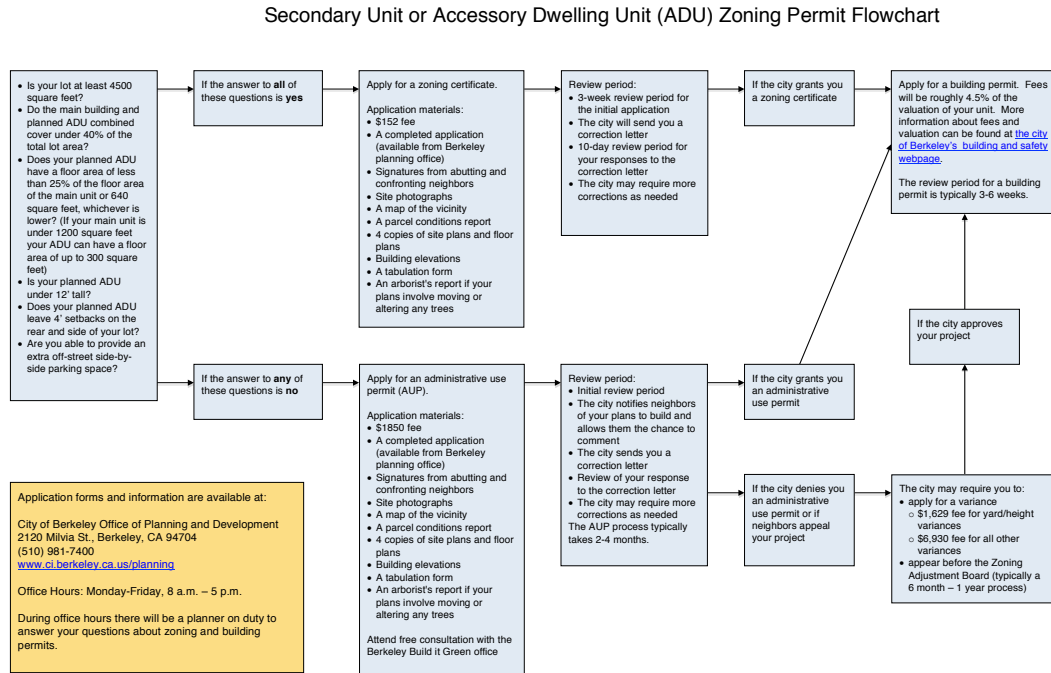
As required by California law (Government Code Section 65852.2), the cities in the study area all have procedures for ministerial (i.e. non-discretionary) review and permitting of secondary units (see, for instance, Berkeley's process, Figure 3). For homeowners who are not accustomed to zoning review procedures, however, even these non-discretionary review processes could prove daunting. WP-2012-03 documents the frustration of East Bay homeowners with the permitting process. Permit application fees for secondary units range from \$150 in Berkeley to \$420 in El Cerrito and \$450 in Albany. Applications typically require detailed site plans. In Berkeley, the homeowner must obtain signatures from their nearest neighbors.

Several of the cities require some level of design review. Oakland, for example, requires small project design review for secondary units over 500 square feet. This review process is over-the-counter, but it is significantly more expensive than basic ministerial review required for units under 500 square feet. In Albany, any secondary unit that requires a change to the exterior of an existing dwelling, or the construction of any new structure, is subject to a design review that includes a public hearing.

For homeowners who cannot meet all of the basic requirements, an administrative or conditional use permit (AUP or CUP) or even a variance may be required. For example, Berkeley requires an AUP – which involves an \$1,800 fee, neighbor notification, and a public comment period – for secondary unit projects that involve setback reductions (to four feet from the standard required for the primary unit), tandem parking and parking reductions, or major residential additions. El Cerrito requires a CUP for secondary units that do not meet setback, lot coverage, parking, floor area, or height limit standards. This involves a \$930 fee and public hearing.



**Figure 4. Secondary Unit or Accessory Dwelling Unit (ADU) Zoning Permit Flowchart**



## **Sensitivity Analysis: The Impact of Modifying Zoning Regulations**

Relaxing zoning requirements would have a major impact on the number of secondary dwelling units that could be built in each city. In each city, we analyzed the impact of relaxing the requirements that pose the biggest barriers. In Berkeley and Richmond, eliminating the lot size minimum could as much as double the number of parcels that could accommodate a legal detached secondary unit. Figure 5 illustrates the effect of eliminating the lot size minimum in Berkeley. In El Cerrito and Oakland, which currently require secondary units to meet the setback requirement applicable to the primary unit, reducing setbacks to four feet increases the number of parcels that could accommodate secondary units by around 80 percent. 6 shows the effect of making this change in El Cerrito.

While lot size minimums and setback requirements have a discernible effect, it is the relaxation of parking requirements that would have by far the greatest impact on legal secondary unit production in all four cities where we conducted parking surveys (Table 7). Working with city staff, we tailored the parking sensitivity analyses to the situation in each city. Albany and Richmond could significantly increase the number of parcels that could accommodate a secondary unit by allowing tandem parking. El Cerrito could triple potential secondary units by waiving the City's unique requirement that the parcel come into conformance with the parking requirement for the

primary unit upon installation of a secondary unit. And Oakland could vastly expand the potential for secondary units by creating a process for waiving parking requirements (Figure ).

**Table 4. Percent of Single-Family Parcels that Could Accommodate Legal Detached Secondary Units under Current and Modified Zoning Regulations**

	Study Area				
	Albany	Berkeley (b)	El Cerrito	Oakland	Richmond
Under current zoning	27%	36%	9%	4%	13%
Modification:					
Eliminate lot size minimum	N/A	66%	N/A	N/A	22% (c)
Reduce setback req. to 4 feet	--	N/A	17%	7%	--
Relax parking requirement (a)	42%	--	39%	40%	17-24%

N/A: Not applicable

--: Not studied

(a) Albany: Allow tandem parking and parking in front setback

El Cerrito: Waive requirement for primary unit to come into conformance with parking standard.

Oakland: Waive parking requirement for secondary unit.

Richmond: 17% - allow tandem parking so long as one space for each unit is independently accessible from the street; 24% - allow tandem parking for all spaces.

(b) Berkeley: Assumes that homeowners could obtain AUPs to reduce setbacks to 4 feet, allow tandem parking, and/or waive parking requirements as necessary.

(c) Richmond eliminating lot size estimate: Assumes parking requirements could be waived as necessary.

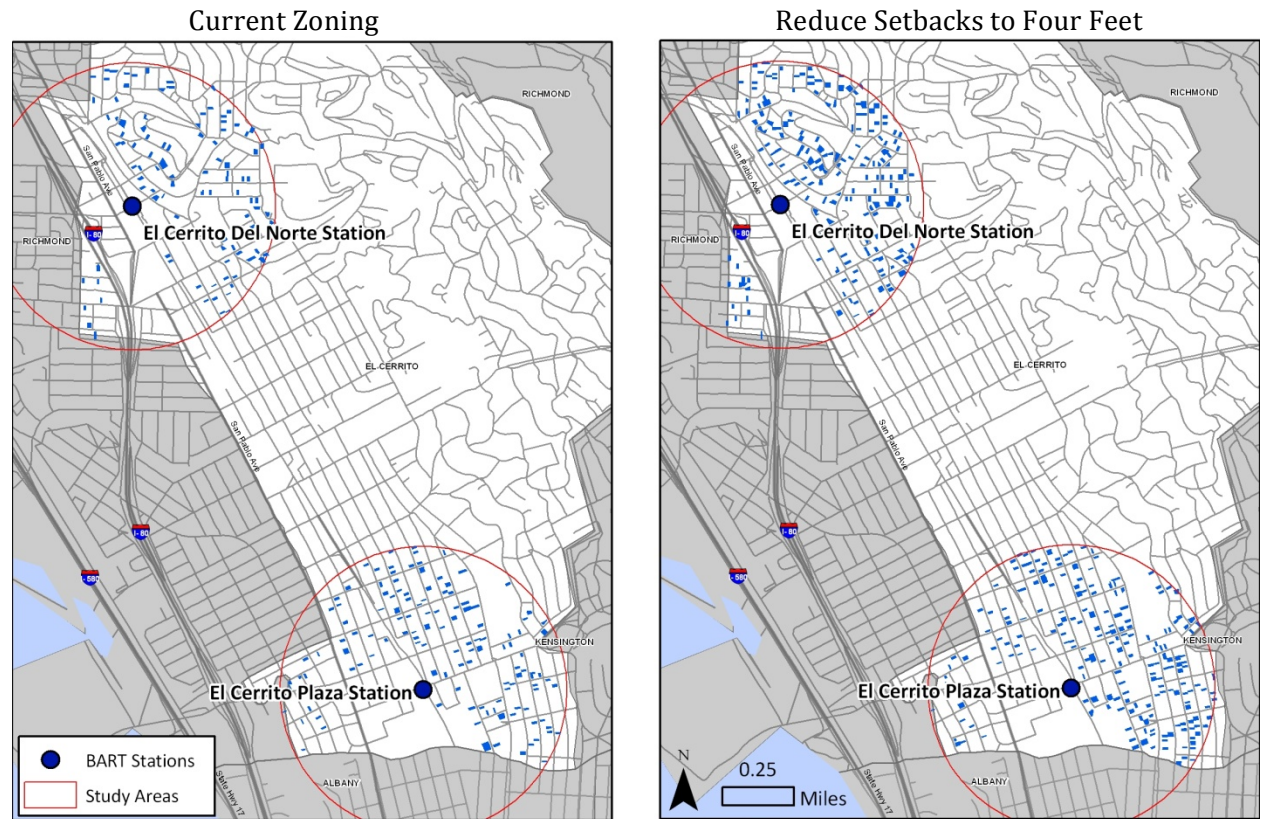
**Figure 5. Secondary Units Allowed in Berkeley Station Areas Under Current Zoning and With No Lot Size Minimum Requirement**



Sources: Center for Community Innovation, 2011; CoreLogic, 2010.

Note: Maps are conceptual and illustrate the number and density of parcels that could potentially accommodate secondary units in the station areas, not the precise locations where secondary units may be built.

**Figure 6. Secondary Units Allowed in El Cerrito Study Areas Under Current Zoning and with Reduced Setbacks**



Sources: Center for Community Innovation, 2011; CoreLogic, 2010; City of El Cerrito, 2010.

Note: Maps are conceptual and illustrate the number and density of parcels that could potentially accommodate secondary units in the station areas, not the precise locations where secondary units may be built.



**Figure 7. Secondary Units Allowed in Oakland Under Current Zoning and with Relaxed Parking Regulations**



Sources: Center for Community Innovation, 2011; CoreLogic, 2010.

Note: Maps are conceptual and illustrate the number and density of parcels that could potentially accommodate secondary units in the station areas, not the precise locations where secondary units may be built.

## **Conclusion**

While the five cities in this study each have different requirements for secondary units, our findings suggest that lot size, setback, and parking requirements are among the most significant in limiting the potential to create secondary units. These regulations were likely put in place to protect the character of single-family neighborhoods, but many have consequences that conflict with other policy goals.

For example, Richmond and Oakland's requirement to provide side-by-side parking spaces encourages homeowners to pour new paving in the front or backyard instead of utilizing existing driveways by parking in tandem. This conflicts with other goals like providing vegetation and open space, minimizing run-off into storm drains, and mitigating urban heat island effects. Regulations that limit secondary unit development to larger lots – either directly through lot size minimums or indirectly through setback requirements – likely affect lower-income homeowners the most. And together, all of the barriers to secondary unit creation in our study areas impede the development of a low-impact, dispersed form of transit-oriented infill with the potential to provide much-needed housing and create supplemental income for homeowners.

Below are five general policy recommendations that will help cities realize the development potential for secondary units (described in more detail in WP-2012-05):

- Simplify the permitting process to allow more secondary units to be built “as of right,” and to minimize hurdles for homeowners who do not have experience with the planning and development process.
- Remove regulatory barriers that prevent many homeowners from legally building secondary units altogether.
- Provide flexibility in how homeowners may meet parking requirements.
- Eliminate parking requirements for secondary units, or allow applicants to choose from a menu of options in lieu of providing off-street parking spaces.
- Facilitate the expansion of carsharing services in moderate-density residential neighborhoods.

Relaxing these requirements and streamlining the approvals process will be a critical component of any strategy to encourage the development of secondary units in the Bay Area. Cities might also consider issues that are beyond the scope of this study but that planning staff deal with regularly, such as the effect of height limits on development potential and barriers that are specific to creating attached secondary dwelling units.

## APPENDIX A - METHODOLOGY

### Estimating Development Potential for Secondary Units

Our analysis relied on a combination of parcel data purchased from CoreLogic (a commercial vendor), measurements taken in Google Earth, and field work. The methodology for each of the five cities varied somewhat, because each jurisdiction has different zoning requirements for secondary units. However, the analysis followed the same three basic steps in each city.

#### ***Step 1: Screening in ArcGIS***

To begin, we screened the CoreLogic parcel data in ArcGIS for basic zoning requirements for secondary units, including:

- *Zoning district and land use.* In all five cities, secondary units may only be built in residential zones, and on parcels with one single-family house (referred to as the primary unit throughout this report).
- *Lot size.* Berkeley and Richmond only allow secondary units on properties of at least 4,500 and 5,000 s.f., respectively.<sup>6</sup>
- *Lot coverage/floor-area ratio (FAR).* Berkeley, El Cerrito and Oakland require secondary units to conform with the lot coverage requirements applicable to the primary unit. These requirements vary by zoning district, and in the case of Berkeley, by number of stories of the primary unit. We estimated lot coverage using the following formula:

$$\frac{(\text{Primary Unit Building Area} / \text{Number of Stories}) + 300 \text{ s.f. Secondary Unit}}{\text{Lot Area}}$$

Albany requires secondary units to conform with the floor-area ratio (FAR) applicable to the primary unit. FAR was calculated as:

$$\frac{\text{Primary Unit Building Area} + 300 \text{ s.f. Secondary Unit}}{\text{Lot Area}}$$

Throughout the study, we assumed a detached secondary unit located in the backyard, with a 300 s.f. footprint and an exterior measuring 17 by 17 feet.<sup>7</sup> Including attached secondary units – which can take the form of a conversion of existing space in or an addition to the primary unit – would have required data that is not available on the architectural details and space utilization of individual single-family homes.

#### **Error! Reference source not found.**

---

<sup>6</sup> Richmond's required minimum lot size varies by zoning district; the parcels in our study areas are subject to the 5,000 s.f. requirement.

<sup>7</sup> These measurements are based on the smallest prototypical secondary units designed for the City of Santa Cruz's ADU Plan Sets book. Although 300 s.f. meets the minimum size requirements for secondary units in all five study cities, most secondary units with a 300 s.f. or smaller footprint would probably include a secondary story or loft, pushing the total living area to 450-600 s.f.

Table 7 shows the total number of single-family residential parcels in the study areas (line a), and the number of parcels that met screening criteria described above (line b).

**Table 7. Results of ArcGIS Screening, Google Earth Measurements, and Parking Surveys**

	Study Areas				
	Albany	Berkeley	El Cerrito	Oakland	Richmond
(a) Total SFR parcels within study areas in zoning districts where secondary units allowed	224	3,003	2,582	1,286	552
(b) Parcels meeting lot size, coverage, and/or FAR requirements (depending on jurisdiction)	195	1,154	2,407	1,223	260
(c) Parcels in Google Earth sample	195	300	406	389	260
(d) Percent of sample with sufficient backyard area for secondary unit*	75%	93%	42%	42%	50%
(e) Estimated total parcels with sufficient backyard area for secondary unit*	147	1,070	1,008	516	130
(f) Parcels in parking conditions sample	66	N/A	66	70	66
(g) Percent of parking conditions sample meeting parking requirements for secondary unit	29%	N/A	26%	11%	8%

\*Parcels that meet lot size, lot coverage/FAR, and setback requirements for secondary units; does not account for parking requirements except in Berkeley.

Sources: CoreLogic, 2010; Center for Community Innovation, 2011.

### ***Step 2: Measuring Lot Dimensions in Google Earth***

Next, we used a Sampling Design Tool in ArcGIS<sup>8</sup> to randomly sample several hundred parcels<sup>9</sup> in each city (line c in Table 7) from the universe of parcels that met lot size, lot coverage, and/or FAR requirements, and exported the parcel boundary shapefiles into Google Earth Pro. For each of the sample parcels, we used Google Earth to measure the depth and width of the parcel as well as the back- and front-yards, and noted driveway configurations and existing detached backyard structures.<sup>10</sup>

<sup>8</sup> The Sampling Design Tool was created by the National Oceanic and Atmospheric Administration's National Centers for Coastal Ocean Science. The tool can be downloaded here:

<http://ccma.nos.noaa.gov/products/biogeography/sampling/>.

<sup>9</sup> This far exceeds the sample size needed to achieve a 90% confidence interval and 10% margin of error (standard assumptions in the field of planning), using even the most conservative assumption of  $p = .5$ .

<sup>10</sup> The backyard was generally defined as the space between the side parcel boundaries (width) and the primary unit and rear parcel boundary (depth); similarly, the front yard depth was defined as the space between the front of the primary unit and the front parcel boundary. Where part of the primary unit protruded significantly into one of the yards, we measured the largest contiguous area. However, parcel shapes and building configurations vary widely. Likely sources of error include variable quality of the aerial images; County parcel boundaries that corresponded poorly with the aerial image; tree cover; differences in measurement techniques among members of the research team; and the inaccuracy of the Google Earth ruler tool.



After compiling these measurements, we estimated buildable backyard area by subtracting from the total backyard area the space required for setbacks and building separation in each city. For cities that do not explicitly require a separation between the primary and secondary units, we assumed a building separation of five feet on the assumption that most homeowners would prefer at least that much space between the two units. For example, a backyard measuring 35 feet wide by 30 feet deep in Berkeley, where secondary units are required to be set back four feet from each lot line, would have a “buildable width” of 27 feet (35 feet minus two four-foot side setbacks); a “buildable depth” of 21 feet (30 feet minus a four-foot rear setback and a five-foot building separation); and a “buildable area” of 567 square feet (27 feet times 21 feet).

Based on these calculations, we determined how many parcels could accommodate a 17 by 17 ft./300 s.f. secondary unit in the buildable width, depth, and area of the backyard (line d, Table 7). In Berkeley and Richmond, we also checked whether parcels could accommodate the required open space after building the secondary unit (Berkeley requires 200-400 s.f. of open space per unit depending on the zone; Richmond requires that single-family residential parcels provide interior yard space equal to 16 percent of the total lot area).

For parcels in Berkeley where we observed an existing detached structure, we assumed it was a one-car garage and that in order to build a secondary unit, the homeowner would need to maintain the detached structure, or replace it with a 9 by 18 foot backyard parking space.<sup>11</sup> In all of the other cities, we dealt with the parking question separately, through the field work described below.

### ***Step 3: Parking Conditions Surveys***

Last, we conducted field work to understand parking configurations in Albany, El Cerrito, Oakland, and Richmond. In each of these four cities, we used the Sampling Design Tool to select a random sample of about 70 parcels that,<sup>12</sup> according to the ArcGIS screening and GoogleEarth measurements, could accommodate a secondary dwelling unit within the buildable area of the backyard.<sup>13</sup> We visited each of the randomly selected parcels in person, and estimated the number

---

<sup>11</sup> In Berkeley, the legality of a parking space comes down to whether there is a two-foot landscape barrier between the driveway and the lot line, and it was not possible to accurately measure this small increment either in Google Earth or through field work. However, it is possible in Berkeley to waive the parking requirements with an administrative use permit (AUP) – except that the requirement to retain or replace an existing parking space cannot be waived. Therefore, after consulting with City staff, we decided to account for existing detached garages as described above, and use proxies such as driveway location to study other parking issues. For more detail on Berkeley’s parking requirements, see Appendix B.

<sup>12</sup> When using the most conservative assumption of  $p = .5$ , 66-70 properties represents the minimum sample needed to achieve a 90% confidence interval and 10 margin of error (standard assumptions in the field of planning).

<sup>13</sup> In other words, we did not field check parking conditions of all parcels, but rather drew on a sample of parcels that could otherwise accommodate secondary units. As a result, the findings from the parking surveys are not necessarily generalizable to other parcels, such as those examined in our sensitivity analysis (e.g. parcels that could not meet current lot size or lot coverage restrictions). Another drawback is that as the methodology for screening parcels based on lot size, coverage, and setbacks evolved over time through discussions with City staff, we were not able to change the original sampling frame to reflect all of the revisions. Despite these limitations, the parking surveys provided information that is not otherwise available on the common parking configurations on each study area, allowing us to evaluate the impact of various parking requirements on secondary unit development potential. Surveying a random selection of all of the

of existing covered parking spaces (i.e. garages and carports) on each lot,<sup>14</sup> the number of cars that could fit in the driveway or other existing paved area, and the configuration of existing covered and uncovered parking spaces (in tandem or side-by-side).

Based on these observations, we estimated the share of the sampled parcels that could accommodate the parking required for a secondary unit in each city (line f, Table 7), and extrapolated to the station areas as a whole. In some cases, a homeowner could accommodate the required parking for a secondary unit by laying new paving in the front or backyard. For example, in Richmond, a homeowner who wishes to build a secondary unit may need to create a new parking space in the front yard, adjacent to the existing driveway. In Oakland and Albany, a homeowner might – if the lot has a side yard driveway that provides access to the rear of the lot – provide the required parking by paving part of the rear yard.<sup>15</sup> To account for these situations, we used the Google Earth measurements to estimate how many lots could physically accommodate these front or backyard parking spaces in addition to a secondary unit.

### **Sensitivity Analyses**

For each city, we studied how changing key zoning requirements would affect the number of lots that could accommodate detached secondary units. For this analysis, our estimates of the number of potential secondary units do not account for existing second units, because our estimates of existing secondary units were made independently of the zoning analysis, and we do not know how the two groups overlap – i.e. we do not know how many existing secondary units conform to current zoning requirements, or how many would conform if zoning requirements were changed in different ways. Therefore, it may be most accurate to interpret our results in terms of increases in potential units rather than absolute numbers, e.g., relaxing zoning regulations would increase the number of potential units by X percent.

- *Eliminating lot size minimums (Berkeley and Richmond).* In the two cities with a lot size minimum requirement, we had originally screened out parcels that did not meet the lot size minimums in Step 1 of the analysis. To study the effect of eliminating the lot size minimum, therefore, we selected a new sample of 70 parcels that were smaller than the required lot size minimum; screened for lot coverage; measured lot dimensions in Google Earth and calculated buildable area. Unless otherwise noted, we assumed that other regulations (e.g. lot coverage, setbacks, parking) would remain constant.
- *Reducing required setbacks (El Cerrito, Oakland).* From our original Google Earth measurements, we already had the dimensions of a random sample of the parcels that met

---

single-family parcels in the study area would have avoided these particular pitfalls, but provided less specific information on the configuration of the types of parcels (larger, lower coverage ratios) that tend to have sufficient space for a secondary unit.

<sup>14</sup> For garages, the number of parking spaces (one or two cars) was based on observed width. Some garages that appear from the street to accommodate only one car may in fact be deep enough to accommodate two cars.

<sup>15</sup> El Cerrito's requirement that a lot must provide two covered parking spaces for the existing primary unit, in addition to the parking required for the secondary unit, means in practice that paving new area in the front or backyard would not be useful.

lot coverage requirements.<sup>16</sup> Using these measurements, we recalculated the buildable width, depth, and area using setbacks reduced to four feet.

- *Relaxing parking requirements (Albany, El Cerrito, Oakland, Richmond)*. Based on the parking configurations observed in the parking surveys, we estimated the percentage of parcels that could meet parking requirements for a secondary unit if those requirements were relaxed to allow tandem parking (Albany, Oakland, Richmond); continued non-conformance with the parking required for the primary unit (El Cerrito); or parking waivers for the secondary unit (all four cities).

### **Estimating the Prevalence of Existing Secondary Units**

In order to provide some context for this analysis, as well as to provide a sample of “suspected” secondary units to be used in the homeowner survey (see WP-2012-03), we estimated how many of the single-family homes in the cities might currently house secondary units.

#### ***Evaluating Potential Secondary Units from Suspects in the Parcel Data***

In the CoreLogic parcel data for cities in Alameda County (Berkeley, Oakland, and Albany), some properties were recorded as single-family residences with two or three dwelling units (as opposed to duplexes or triplexes, which are separate land use categories). The commercial parcel data for Contra Costa County cities (El Cerrito and Richmond) did not consistently include the number of units.<sup>17</sup> However, assessor’s parcel data provided by the City of El Cerrito included some repeat listings for single-family properties that appeared to indicate an addition of new floor space.

Research assistants visited a sample of these “suspected” secondary units in order to determine whether these clues in the parcel data were in fact good indicators of existing secondary units. The results, shown in Table 8, indicate that as many as half of these properties do indeed have secondary units. Based on this finding, we oversampled these parcels in the homeowner surveys.

To determine whether a property had a secondary unit, researchers looked for a secondary address (e.g. 1420 ½ Addison St. or 1420 B Addison St.); a detached structure with windows and other signs of habitation; and/or a secondary main entrance, mailbox, or electric meter. The ranges given in Table 8 indicate parcels where there was uncertainty about whether there was a secondary unit or not. These estimates of secondary unit prevalence are most likely conservative because not all secondary units are visible from the exterior; homeowners who have built illegal units are particularly likely to conceal them. On the other hand, some of the units that appear to be secondary dwellings may in fact be legal duplexes or other types of multi-family housing.<sup>18</sup>

---

<sup>16</sup> We did not analyze the effect of reducing lot coverage requirements because, based on some preliminary calculations, these requirements did not appear to be a major barrier. For example, using our calculation for estimating lot coverage --  $[(\text{Primary Unit Building Area} / \text{Number of Stories}) + 300 \text{ s.f. Secondary Unit}] / \text{Lot Area}$  -- we estimated that in Oakland all but 5 percent and in El Cerrito all but 7 percent of single-family residential parcels could build a secondary unit without exceeding the lot coverage maximum.

<sup>17</sup> The CoreLogic data is based on county tax assessor’s records.

<sup>18</sup> All five cities in the study differentiate between duplexes and secondary units. Typically, duplexes may be rented or sold separately and are not allowed in exclusively single-family residential districts. Secondary

**Table 8. Results from Field Work: "Suspected" Secondary Units**

	Alameda County*			Contra Costa County**
	Berkeley	Oakland	Albany	El Cerrito
Total records	143	89	5	49
Sample size	30	36	5	49
Secondary units observed	16-18	23-26	3	19-20

\*Parcels recorded as single-family residences with 2-3 units.

\*\*Parcels recorded as single-family residences with multiple entries, each with different building areas. None of these indicators appeared in the Richmond data.

Source: CoreLogic, 2010; City of El Cerrito, 2010; Center for Community Innovation, 2011

### ***Evaluating Potential Secondary Units among Randomly Selected Single-Family Parcels***

In each station area, researchers also visited a random sample of single-family residential parcels that did not have the hallmarks of a "suspected secondary unit," as described above. The results are shown in Table 9. In this analysis, we hoped to "ground-truth" the estimates of secondary unit prevalence provided in the homeowner survey (see WP-2012-03).

**Table 9. Results from Field Work: Randomly Selected Single-Family Residential Parcels**

	Station Areas				
	North Berkeley	Ashby	MacArthur	El Cerrito Plaza	El Cerrito del Norte
Sample size	66	66	66	66	66
Secondary units observed	16	10*	8-13	4**	1**

\*2 in Oakland; 8 in Berkeley.

\*\*All in El Cerrito (though sample was randomly selected from all single-family parcels in the station areas, which includes parts of Albany and Richmond.)

Source: CoreLogic, 2010; City of El Cerrito, 2010; Center for Community Innovation, 2011

units are generally permitted on lots occupied by one single-family home and must be subordinate to the single-family home in size and appearance. In addition, the homeowner must occupy either the single-family home or the secondary unit at all times, and the secondary unit cannot be sold separately from the single-family house.

## Endnotes

---

<sup>i</sup>San Francisco Development Fund 1988.

<sup>ii</sup> We provided individual memos to each city detailing the regulatory barriers and recommending policy changes. These memos are available upon request to the authors.